

SOUTH AFRICAN IMMUNOLOGY SOCIETY

NEWSLETTER

MESSAGE FROM THE EDITOR



Dear SAIS members,

Welcome to our March edition. Please let us know of interesting articles/conference announcements and job postings to circulate in the Newsletter. We are still publishing our “Community Corner” to direct traffic to publications within the SAIS network. Please let us know of all your publications so we stay informed of the news from within our own SAIS community. Copy the citation or link and send it to us (saimmunologynewsletter@gmail.com).

In this edition, we bring more news on Measles/Rubeola outbreak. With the ongoing National Measles vaccination drive, immunology will be a corridor conversation for most family and friends at home/chat room. We trust SAIS members will be ambassadors to allay fears and misconceptions about vaccinations, particularly the Measles vaccine. Additionally, the month of March was dedicated to celebrating the stories of Tuberculosis globally. Please check out our section on “Tuberculosis in three spheres of life on land.”

I encourage all members to follow SAIS updates on LinkedIn, Facebook and Twitter to stay updated with the latest news, events and research.

Regards!
The Editor

CONTACT US!

Please send us your recent publications so we can showcase them in our Community Corner. If you are hiring/recruiting, we would be more than happy to advertise for you in the newsletter and on our social media platforms. You can email the editors at newsletter@saimmunology.org.za by the 20th of each month to be featured in our next newsletter.



<https://www.saimmunology.org.za/>



@SAImmunologySociety



South African Immunology Society (SAIS)



@SAImmunology

FUNDING CALLS, CONFERENCES, WEBINARS

IMMUNOLOGY

TALKS TO

PUBLIC HEALTH



https://us06web.zoom.us/webinar/register/WN_zMqXiYrIQJKIGinQt2DnKQ#/registration



International day of immunology

APRIL 29, 2023

IUIS

EFIS

#ThankYouImmunology
dayofimmunology.org

IUIS, 29 April 2023, Register Today!

APRIL 16 - 19, 2023

INNATE IMMUNITY: FROM INNATE SENSING TO ADAPTIVE RESPONSES

Joint Meeting with Myeloid Cells: Development, Diversity and Distinct Biological Roles

Organizers: Hao Wu, Russell Vance, and Andrea Ablasser

<https://www.keystonesymposia.org/conferences/conference-listing/meeting?eventid=6900>

Keystone Conference, 16 - 19 April 2023

APRIL 23 - 26, 2023

INFLAMMATION IN THE LUNG: FRIEND OR FOE IN VIRAL INFECTIONS?

Joint Meeting with From First Breath: Lung Development, Infection, Repair and Aging

Organizers: Andreas Wack, Cecilia Johansson, and Ivan Zanoni

<https://www.keystonesymposia.org/conferences/conference-listing/meeting?eventid=6934>

Keystone Conference, 23 - 26 April 2023

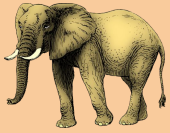
IVIS2023
SOUTH AFRICA

13th INTERNATIONAL VETERINARY
IMMUNOLOGY SYMPOSIUM
17-21 NOVEMBER, 2023

Register at:
ivis2023.org



IVIS2023: Kruger National Park, South Africa, 17 - 21 November 2023



THE VETERINARY IMMUNOLOGY DIVISION Tuberculosis In the Three Spheres Of Life On Land



The month of March marks the annual drive to bring awareness to the plight of tuberculosis all over the world. The theme for this year's World

TB Day campaign is
"Yes! We Can End TB!"

There is a complex interplay between TB in animals and humans and addressing both in a holistic manner is crucial to ending the TB epidemic. By understanding and tackling the disease in all its forms, we can make significant progress towards a world free of TB.

Animal versus human TB

Animals are usually infected with bovine TB (*Mycobacterium bovis*), a close relative of *Mycobacterium tuberculosis*, which primarily affects humans. However, TB spillover often occurs in humans, livestock, and wildlife at the numerous interfaces where these three spheres of life on land interconnect. For example, bovine TB can be shed by infected animals into the soil and water, as well as to other animals such as predators that prey on them. In 2016, the Animal TB Research Group at Stellenbosch University found that an elephant in Kruger National Park was infected with human tuberculosis. This could have been caused by people's food or food containers being picked up by wildlife. This demonstrates the importance of improving human living conditions and reducing wildlife-human interactions.

The economic impact of animal TB in South Africa

Dr. Peter Buss, the Senior Vet Manager at Veterinary Wildlife Services (VWS), explains that bovine TB in South Africa was the result of European settlers bringing their infected cattle into the country. Rural communities in South Africa keep cattle for meat and milk, and the spread of TB among these animals can lead to significant financial losses for these communities as infected animals may need to be culled and their products cannot be sold. For cattle farmers, if infection is detected, the farm is placed under quarantine, with loss of livestock as a possible outcome. Agriculture accounted for approximately R141 million of South Africa's GDP as of December last year. Therefore, the spread of TB in animals not only affects the livelihoods of rural communities but also has a negative impact on the overall economy of the country.

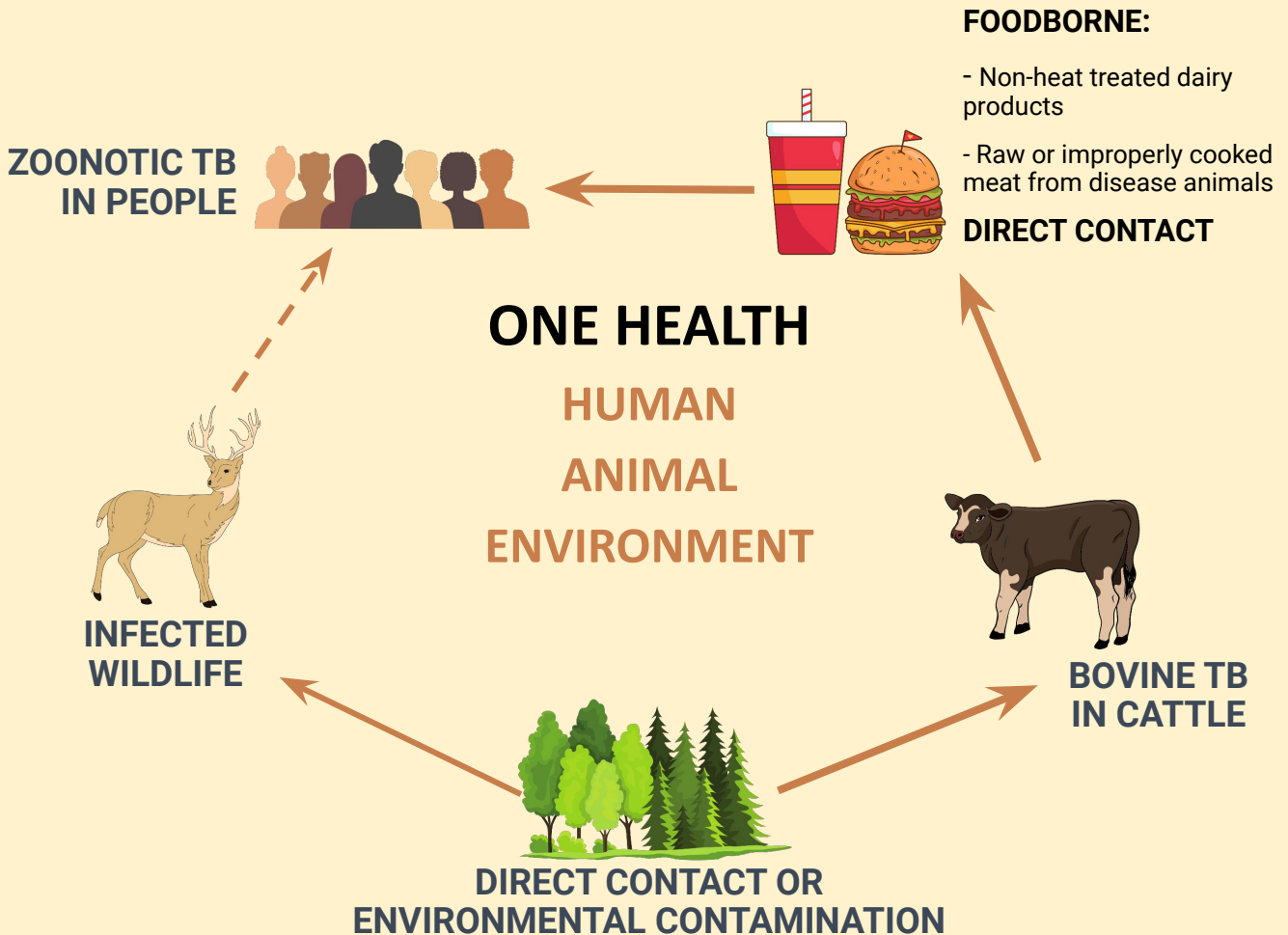
The Animal TB Research Group at Stellenbosch University

The Animal TB Research Group at Stellenbosch University is hard at work at the intersection of tuberculosis in humans, livestock, and wildlife. Their research is of utmost medical and economic importance. It has been difficult to detect infection in animals in a timely manner due to limitations in testing equipment, a lack of equipment that can work in the field, and a lack of species-specific reagents. The group's efforts have yielded tests that can be utilized for live animals of different species, and these advancements will hopefully lead to better disease management and prevention strategies, as well as improved conservation efforts for at-risk species. However, there is still much work to be done in developing more accessible and accurate testing methods for a wider range of animal species. The One Health approach emphasizes the interdependence of human, animal, and environmental health, and TB needs a multi-pronged approach to effectively control and ultimately eliminate this disease.

Contributors: Miss Leka Mhlophe and The Animal Tuberculosis Research Group at Stellenbosch University. For more information Visit: [Interconnected: Human and animal TB part of the same problem](#)

YES! WE CAN END ZONOTIC AND BOVINE TUBERCULOSIS!

BREAK THE CYCLE OF TRANSMISSION



ACT NOW TO SAVE LIVES AND SECURE LIVELIHOODS
SMALL CHANGES CAN MAKE A DIFFERENCE!

Adapted from: ZTB infographic.pdf (theunion.org)

For more information:

WHO - TB partners launch first roadmap to jointly stop the transmission of bovine and zoonotic tuberculosis (who.int)

WHO- Zoonotic TB Factsheet (who.int)

WOAH- Bovine Tuberculosis - WOAH – Asia

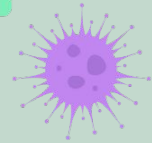
The UNION-Spotlight: The Zoonotic TB Sub-section | The Union

CDC-World TB Day | TB | CDC



MEASLES/RUBEOLA

Measles is one of the most contagious diseases ever faced by humans.



1757

Scottish doctor transmitted the disease to healthy individuals using blood of infected patients to demonstrate that it was caused by an infectious agent.

1848

Regions of the world without previous exposure to the measles virus were particularly vulnerable: outbreaks of the virus took devastating effect in isolated communities such as Hawai'i.

1954

A measles outbreak at a school allowed doctors at Boston Children's Hospital to try and isolate the virus, taking throat swabs and blood samples from infected students. The culture obtained from 11-year-old schoolboy David Edmonston successfully led to the virus's cultivation and enabled doctors to create the first vaccine against measles.

1960

John Franklin Enders (father of modern vaccines) developed the measles vaccine from the 'Edmonston-B' strain. Enders and his team tested their measles vaccine on small groups of children before beginning trials on thousands of children in New York City and Nigeria.

1963

The first measles vaccine was licensed for public use.



1966

The first internationally focused measles immunization programmes took place in Africa.

WHO worked with the governments of over 20 countries in western and central Africa, alongside the USAID and CDC, to administer vaccinations with the joint aim of controlling measles and eradicating smallpox.

1967

The Gambia became the first country in the world in which transmission of the virus was interrupted.

1968

Dr Maurice Hilleman passed the virus through chick embryo cells 40 times to weaken it, producing a vaccine that did not cause severe side effects, known as the Edmonston-Enders strain.

1971

Hilleman combined the vaccines against measles, mumps, and rubella into the MMR vaccine.

1974

Measles was among the first diseases targeted by the WHO to develop and expand immunization programmes throughout the world. Widespread childhood vaccination against measles has drastically reduced disease rates worldwide.

1998

A minor setback for the measles vaccination programme success. A fraudulent research paper was published in 'The Lancet', asserting a link between the MMR vaccine and autism without any robust scientific evidence.

vaccination rates dropped below the level required for community protection, which caused a resurgence in measles cases in England, Wales, parts of the USA and Canada.

2010

The British General Medical Council ruled that the study's lead author engaged in misconduct. The paper was formally retracted, and its author was banned from practising medicine.

2016

The region of the Americas was declared free of endemic measles by an independent body of experts, becoming the first WHO region to achieve this distinction of having eliminated measles. This status was lost two years later.

2019

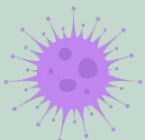
There were over 207 000 measles deaths globally, and the highest number of reported cases in 23 years. Even though a safe and cost-effective vaccine is available, global measles deaths continued to climb prior to the COVID-19 pandemic.

2020

Measles vaccination prevented an estimated 31.7 million deaths worldwide.

Present

DON'T WAIT. VACCINATE.



PUBLICATIONS & INTERESTING READS

Human

B cell receptor signaling in germinal centers prolongs survival and primes B cells for selection

[https://www.cell.com/immunity/fulltext/S1074-7613\(23\)00077-8?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS1074761323000778%3Fshowall%3Dtrue](https://www.cell.com/immunity/fulltext/S1074-7613(23)00077-8?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS1074761323000778%3Fshowall%3Dtrue)

Don't Forget to Look Both Ways: THE ROLE OF BLOOD EOSINOPHIL COUNTS IN IDENTIFYING SUBGROUPS AND SUSCEPTIBILITY IN COPD PATIENTS

[https://journal.chestnet.org/article/S0012-3692\(22\)04232-5/fulltext](https://journal.chestnet.org/article/S0012-3692(22)04232-5/fulltext)

It Doesn't Smell Like Cancer to Me: THE PROMISE OF EXHALED BREATH BIOMARKERS FOR LUNG CANCER DIAGNOSIS

[https://journal.chestnet.org/article/S0012-3692\(22\)04041-7/fulltext](https://journal.chestnet.org/article/S0012-3692(22)04041-7/fulltext)

Neutrophils in host defense, healing, and hypersensitivity: Dynamic cells within a dynamic host

[https://www.jacionline.org/article/S0091-6749\(22\)01658-X/fulltext](https://www.jacionline.org/article/S0091-6749(22)01658-X/fulltext)

Patients with COVID have their own "gut feeling" for viruses

[https://www.jacionline.org/article/S0091-6749\(23\)00004-0/fulltext](https://www.jacionline.org/article/S0091-6749(23)00004-0/fulltext)

Programming cytomegalovirus as an HIV vaccine

[https://www.cell.com/trends/immunology/fulltext/S1471-4906\(23\)00026-1?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS1471490623000261%3Fshowall%3Dtrue](https://www.cell.com/trends/immunology/fulltext/S1471-4906(23)00026-1?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS1471490623000261%3Fshowall%3Dtrue)

Toward a global virus genomic surveillance network

<https://www.sciencedirect.com/science/article/pii/S1931312823001075>

Veterinary

Adaptation and diagnostic potential of a commercial cat interferon gamma release assay for the detection of *Mycobacterium bovis* infection in African lions (*Panthera leo*)

<https://www.mdpi.com/2076-0817/11/7/765>

Culture-Independent PCR Detection and Differentiation of Mycobacteria spp. in Antemortem Respiratory Samples from African Elephants (*Loxodonta africana*) and Rhinoceros (*Ceratotherium Simum*, *Diceros Bicornis*) in South Africa

<https://www.mdpi.com/2076-0817/11/6/709>

Duration of Immunity Induced after Vaccination of Cattle with a Live Attenuated or Inactivated Lumpy Skin Disease Virus Vaccine

<https://www.mdpi.com/2076-2607/11/1/210>

Effect of commercial tannins on parasitic infection and immunity of lambs naturally infected with *Haemonchus contortus*

<https://www.sciencedirect.com/science/article/abs/pii/S2405939023000035?via%3Dihub>

Identification and characterisation of Nontuberculous Mycobacteria in African buffaloes (*Syncerus caffer*), South Africa.

<https://www.mdpi.com/2076-2607/10/9/1861>

Markers of inflammation in free-living African elephants (*Loxodonta africana*): reference intervals and diagnostic performance of acute phase reactants.

<https://onlinelibrary.wiley.com/doi/10.1111/vcp.13197>

OMIP-085: Cattle B-cell phenotyping by an 8-color panel

<https://onlinelibrary.wiley.com/doi/10.1002/cyto.a.24683>

OMIP-089: Cattle T-cell phenotyping by an 8-color panel

<https://onlinelibrary.wiley.com/doi/10.1002/cyto.a.24718>

Reduced capability of refrigerated white rhinoceros whole blood to produce interferon-gamma upon mitogen stimulation

<https://www.sciencedirect.com/science/article/abs/pii/S0165242722001052?via%3Dihub>

JOBS & OPPORTUNITIES

Human

Postdoctoral Research Associate - National Academies of Sciences, USA

The National Academies of Sciences, Engineering, and Medicine administers postdoctoral and senior research awards at participating federal laboratories and affiliated institutions at locations throughout the U.S and abroad. We are seeking highly qualified candidates who hold, or anticipate earning, a doctorate in a variety of fields of science or engineering. Degrees from foreign universities should be equivalent in training and research experience to a doctoral degree from a U.S. institution. Citizenship eligibility varies among the sponsoring laboratories. For detailed program information, to search Research Opportunities, and to contact prospective Research Adviser(s) visit www.nas.edu/rap.

Research Associate - Africa Health Research Institute, South Africa

We are recruiting a Research Associate (scientist or clinician) to work on a new project, 'EVOLVE-HBV', studying hepatitis B virus (HBV) infection at the Africa Health Research Institute in Durban, South Africa working in collaboration with the Francis Crick Institute, UK.

For more information and mode of application, check AHRI website.

Senior Clinical Trial Manager - Int'l AIDS Vaccine Inc., South Africa

Help IAVI translate science into global health impact as a Senior Clinical Trial Manager!

IAVI is seeking a highly motivated Senior Clinical Trial Manager (CTM) who manages, oversees and executes day-to-day operational activities for the conduct of clinical trials according to ICH/GCP guidelines and relevant regulatory guidelines. The Sr. CTM will lead clinical operations of early and late phase and/or highly complex clinical trials, mentor other clinical operations staff, and lead process improvement.

For application forms and more information, check company's website.

Postdoctoral Fellow in Biostatistics - MD Anderson Cancer Center, USA

A full-time postdoctoral fellow position is available in Professor Wenyi Wang's lab in the Department of Bioinformatics and Computational Biology at The University of Texas MD Anderson Cancer Center in Houston, Texas. To apply, please email (1) a cover letter describing current and future research, (2) a curriculum vitae, and (3) a list of three references to Dr. Wenyi Wang at wwang7@mdanderson.org

Veterinary

Postdoctoral Fellow - Animal Tuberculosis Research Group, South Africa

A position for a postdoctoral fellow is available in the Animal Tuberculosis Research Group, Division of Molecular Biology and Human Genetics, Department of Biomedical Sciences at the Faculty of Medicine and Health Sciences, Stellenbosch University. This fellowship is suitable for individuals with a background in molecular biology, genetics, and bioinformatics, with a particular interest in whole genome and deep sequencing analyses of mycobacteria, molecular epidemiology of infectious diseases, and the control of diseases of zoonotic importance. Applicants are required to submit their CV (indicating research outputs), covering letter (indicating area of expertise, research interests and experiences) and the names and up-to-date contact details of three academic referees to: Prof Michele Miller (miller@sun.ac.za). Please note that postdoctoral fellows are not appointed as employees, and their fellowships are awarded tax-free. They are therefore not eligible for employee benefits. Closing date for applications: 21 April 2023.

Postdoctoral Fellow (Mucosal Vaccines)- The Vaccine and Infectious Disease Organization, Canada

Dr. Aneesh Thakur, Principal Investigator, [Laboratory of Vaccine Engineering and Immunology \(LVEI\)](#) is seeking an outstanding Postdoctoral Fellow focusing on subunit mucosal vaccine formulation and delivery to join his team. The ability to induce airway mucosal immunity is an essential property of future subunit vaccines because several pathogens, e.g., respiratory viruses and *Mycobacterium tuberculosis* enter the human body via the airways. It is well known that protection against these pathogens requires activation of the mucosal immune system, which can only be primed via mucosal vaccine administration. However, little is known about how to design safe nanoparticle-based subunit vaccines optimal for the induction of airway mucosal immunity. The purpose of this project is to elucidate the essential design criteria for protective immunity by inhalable subunit vaccines intended for safe pulmonary administration. The project will combine approaches in formulation, pharmaceutical nanotechnology, imaging, and immunology to achieve the objectives. Interested candidates are asked to submit their application in one single application document (pdf file) including a statement of research interest, complete curriculum vitae (CV), and contact information of three references. Further information is available at: [VIDO Job Board - Postdoctoral Fellow - Mucosal Vaccines \(applytojobs.ca\)](#)

COMMUNITY CORNER



Diagnosis of iron deficiency anaemia in hospital patients: Use of the reticulocyte haemoglobin content to differentiate iron deficiency anaemia from anaemia of chronic disease

Authors: E Schapkaitz, **S Buldeo**, J N Mahlangu

Author affiliations: Dr Elise Schapkaitz is a haematologist in the Charlotte Maxeke Johannesburg Academic Hospital National Health Laboratory Service (NHLS) Complex and the Department of Molecular Medicine and Haematology, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa. Dr Suvarna Buldeo is a clinical pathologist at the NHLS and the Department of Haematology, School of Clinical Medicine, College of Health Sciences, Nelson R Mandela School of Medicine, University of KwaZulu-Natal, Durban, South Africa. Prof. Johnny Mahlangu is Head of the School of Pathology, Faculty of Health Sciences, University of the Witwatersrand, Head of the Diagnostic Section and Quality Management in the Department of Molecular Medicine and Haematology, NHLS, and Director of the Bleeding Disorders Unit at Charlotte Maxeke Johannesburg Academic Hospital

The diagnosis of iron deficiency anaemia in hospital patients with chronic infections and inflammation presents a challenge. Recently laboratory tests such as the reticulocyte haemoglobin content, which are independent of infection and inflammation, have become available for routine diagnostic use. In this study, the authors discuss the diagnostic distinction between IDA, ACD and the combined state of IDA and ACD in hospital patients with chronic infections and inflammation.

The authors report that, although the CHr test is not superior to standard tests for IDA, it is a simple and cost-effective alternative to biochemical and haematological parameters for the diagnosis of IDA in hospital patients. It is recommended that in hospital patients with anaemia a C-reactive protein (CRP), or other biochemical markers of inflammation, and a CHr be added to the initial FBC assessment. If the CRP is elevated, IDA can be diagnosed in patients with coexistent ACD in the presence of a CHr <28 pg and hypochromic red cell indices.

RESOURCES

<https://www.faisafrica.com>
<https://immunopaedia.org>
<https://iuis.org>
<https://www.stemcell.com/>

SOCIALS TO FOLLOW

@AllergyKidsDoc
@ShabirMadh
@EurJImmunol
@socmucimm

SAIS would like to thank all members for their ongoing support! To continue being a part of our growing community, please keep up to date with your membership. To update your membership and familiarise yourself with the new renewal process, please visit <https://www.saimmunology.org.za/membership.htm>

If you have any suggestions, feel free to contact us.

Happy Friday!

The SAIS Newsletter Editorial Team

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